TECH TRIVIA ANSWERS

Introduction

■ Page 7 The answer is D.

The six conflicts include Egypt/Syria–Israel (1973); Iran–Iraq (1980 to 1988); United States–Libya (1986); Afghanistan–Afghan Rebels (1988 to 1991); United States/Saudi Arabia–Iraq (1991); and North Yemen–South Yemen (1994).

Communications and Networking Technologies

■ Page 15 The answer is A.

COWs stands for cell on wheels. *(Source: CNN Interactive)*

■ Page 17 The answer is A.

In Bell's honor, all phones served by the Bell System in the United States and Canada went silent for one minute. *(Source: Sprint)*

■ Page 19 The answer is B.

Infrared lasers are much more useful for imaging tissue than for ablating or altering it. In general, lasers used in eye surgery have shorter wavelengths than those in the infrared region. *(Source: National Technology Transfer Center—Washington Operations)*

■ Page 21 The answer is B.

Web sites containing new images transmitted from the Mars spacecraft received some 100 million hits in five days—a world record, according to NASA. *(Source: Science News Online)*

Energy Technologies

■ Page 25 The answer is B.

Bottled water originating from well-protected underground sources (wells or springs) that are not subject to intermittent contamination from surface water, and that have been consistently shown to be free of coliform bacteria, will be safe to drink. However, the deadly microbe *Cryptosporidium* has been found in swimming pool water, surface waters, and food. *(Source: Centers for Disease Control and Prevention)*

■ Page 27 The answer is C.

The speed of light is 186,282 miles per second. Therefore, sunlight takes 8.3 minutes to travel the 93 million miles to Earth. If a cheetah were to travel that same distance at its top speed, the world's fastest land animal would reach Earth in about 151 years! *(Source: University of Michigan)*

■ Page 29 The answer is B.

In 1941, Packard began offering air conditioning in several models, and Hupmobile, Graham-Paige, and American Bantam ceased automobile production. *(Source: Motorcraft)*

■ Page 31 The answer is C.

The human brain probably has enough electricity to light a 15- or 20-watt bulb, like the one used in your refrigerator. This electricity helps your ideas jump around from cell to cell. Now you can really say you have a "bright idea"! *(Source: Commonwealth Edison Company's Electric Universe)*

Health and Medical Technologies

■ Page 35 The answer is C.

Over 80 percent of biopsied breast abnormalities are benign, but any breast lump must be evaluated by a physician. With new, less invasive biopsy procedures, this examination can sometimes take place in the physician's office. (*Source: National Alliance of Breast Cancer Organizations)*

■ Page 37 The answer is D.

In addition to vertebral fractures, osteoporosis annually causes 300,000 hip fractures, 200,000 broken wrists, and 300,000 fractures of other bones. An estimated 37,500 people die each year following fracture-related complications. (*Source: National Osteoporosis Foundation)*

■ Page 39 The answer is D.

Beginning in 1907, Raman worked for 10 years in the Indian Finance Department while conducting his physics research and publishing more than 30 papers. In 1924, he was elected Fellow of the Royal Society, London, and was knighted by the British government in India in 1929. In 1930, he received the Nobel Prize in physics for the discovery of the Raman effect, thus becoming the first Asian to receive the award in science. *(Source: The Nobel Prize Internet Archive)*

■ Page 41 The answer is C.

Seeing with electrons, scientists have unraveled the structure of matter and explored the mysteries of the universe. But no one has conclusively proved that the universe began sometime between 10 and 20 billion years ago in an event called the Big Bang. *(Source: Science Museum)*

Manufacturing Technologies

■ Page 45 The answer is D.

Although the luminous intensity was very low, the gallium arsenide–phosphorus LEDs still found use in a variety of applications, primarily as indicators. *(Source: Marktech Optoelectronics)*

■ Page 47 The answer is B.

Assembling a chassis every 1 1/2 hours, the company produced 308,162 cars in 1914, which was more than all other automakers combined. *(Source: Ford Motor Company)*

■ Page 49 The answer is C.

The number of transistors has significantly grown from 2,300 on the 4004 chip to 7.5 million on the Pentium II chip. *(Source: Popular Science)*

■ Page 51 The answer is A.

Conkers are the hard fruit of the horse chestnut tree. In Great Britain, schoolchildren drill a hole in the conker and thread a string through it. One player dangles his/her conker by the string, while the opponent swings his/her conker on its string and attempts to strike the hanging conker. Players take turns doing this until one conker is so damaged that it is dislodged from its string. Naturally, the stronger and harder the conker, the more chance of success. *(Source: New Scientist)*

Materials Technologies

■ Page 55 The answer is B.

On the *Spirit of Akron*, the old sign required seven pieces of heavy equipment to be installed for each excursion. The new LED sign requires only one piece—a small, hand-carried laptop computer. *(Source: Goodyear)*

■ Page 57 The answer is C.

It takes water to either grow or make our foods. This water is either supplied by nature as precipitation or added by humans during the growing/production process. But it is difficult to tell by the size or texture of a food how much water was actually used to produce the food item. For example, single servings of lettuce, watermelon, and steak require 6, 100, and 2,607 gallons of water, respectively. *(Source: U.S. Geological Survey)*

■ Page 59 The answer is B.

Inside a computer disk drive, the spinning disk creates an air cushion over which the electromagnetic read/write head floats. Depending on design, this air buffer ranges from 2 to 15 microns. Red blood cells average about 10 microns in thickness. By contrast, the thickness of a smoke particle and fingerprint is about 30 microns. A human hair is about 75 microns thick. *(Source: Data Recovery Laboratories, Sandia National Laboratories)*

■ Page 61 The answer is C.

Technically speaking, the "W" stands for winter grade. 10W-30 means that the oil will flow like a normal 10 weight oil at a low (winter) temperature, but will flow like a 30 weight oil at normal temperatures. *(Source: Indy Lube Express, Sloan Tech Tips)*

Optical and Sensor Technologies

■ Page 65 The answer is D.

The price of single first-class passage aboard the *Titanic* in today's dollars would be roughly $50,000. *(Source: St. Petersburg Times)*

■ Page 67 The answer is D.

For many years, scientists used the Bertillon System, which recorded the dimensions of certain skeletal body parts. But in 1903, Leavenworth Federal Penitentiary received a prisoner named Will West. Shockingly, Will had almost the same Bertillon measurements (as well as appearance) as another prisoner. Even though the two unrelated criminals looked identical and had similar names, their fingerprints were, of course, different. Thanks to this remarkable case, fingerprinting became the standard for personal identification. *(Source: Federal Bureau of Investigation)*

■ Page 69 The answer is A.

In the 1870s, bicyclists, known then as "wheelmen," were challenged by rutted roads of gravel and dirt. They united in 1880 as the League of American Wheelmen to lobby the government for more paved roads. Today, known as the League of American Bicyclists, this organization still works to improve the quality of bicycling in America. *(Source: League of American Bicyclists)*

■ Page 71 The answer is C.

Vertical door windows receive the bulk of their heat radiation from the ground, trees, and buildings around them. Sloping front and back windows receive most of their heat radiation from the sky, which is much colder. The result is that front and back windows cool down much more rapidly than the door windows, and the ice precipitated from the air in contact with these windows builds up more quickly. *(Source: New Scientist)*